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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,680	10/18/2005	Yutaka Matsuoka	043210	8336

38834 7590 02/25/2008

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EXAMINER	
KASHNIKOW, ERIK	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
02/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/524,680	MATSUOKA ET AL.	
	Examiner	Art Unit	
	ERIK KASHNIKOW	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/15/2005, 05/02/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally **limited to a single paragraph** on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

1. Claim 8 is objected to because of the following informalities: Examiner suspects the word “to” was left out after the phrase "claim 5 or 6" as it stands the claim is unclear. To further prosecution Examiner examined the claim as if the word “to” followed the before mentioned claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 6 recites the limitation "inorganic layered compound (c)" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim. Claim 5 speaks of (c) as an inorganic layered dispersion.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Gregorich et al. (Can. J Soil Sci **68**: 395-403).

7. In regards to claims 1 and 3 Gregorich et al. teach dispersion of an inorganic layered composition, in this case clay and soil is dispersed using hydrogen peroxide in a dispersion medium (page 397 first column).

Claim Rejections - 35 USC § 103

8. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaya et al. (US 5,942,298) in view of Gregorich et al. (Can. J Soil Sci **68**: 395-403).

9. Sakaya et al. teach films contain inorganic layered compositions (column 1 lines 64-67), and specifically mentions clay as the layered inorganic material (column 23 line 56).

10. In regards to claim 2 and 4 Sakaya et al. teach the use of a high speed stirrer disperser (column 3 lines 39-42).

11. In regards to claim 5 and 7 Sakaya et al. teach the composition also comprise a resin (column 4 lines 31-32) of which polyvinyl alcohols and ethylene vinyl alcohols are preferred embodiments (column 4 lines 56-58).

12. In regards to claim 6 Sakaya et al. further teach that the concentration of the inorganic layer compound and the resin is 4-15 wt % (column 5 lines 37-39). Examiner is aware that the reference states organic layer compound at the lines cited, however continued references are made to inorganic layered compounds throughout the reference and not to organic layered compounds and therefore it is Examiners opinion that this is a spelling error in the reference. Sakaya et al. further teaches that the mass ratio of the inorganic layered compound and the gas barrier resin is approximately 4-90% which encompasses applicants range (claim 10).

13. In regards to claim 8 Sakaya teach that the base material of their invention can be used including polyolefins and polyesters (column 8 lines 1-8). Sakaya et al. teach a coating thickness of 10 to less than 1μm (column 7 lines 26-27), which is within Applicant's range.

14. In regards to claims 9 and 10 Sakaya teach thicknesses above and below applicants defined thickness (sheets $\geq$ 25μm > films) for films and sheets (column 8 lines 32-33). Sakaya et al. also teach that it is well known in the art at the time of the invention to make packages for food items (column 1 lines 13-61).

15. In regards to claim 11 Sakaya et al. are silent regarding bottles however they do teach containers for carbonated drinks, and the most common container for carbonated drinks and an obvious variant of “container for carbonated drinks” is a bottle (column 1 line 36).

16. While Sakaya et al. teach the containers made from a dispersed layered inorganic compound composition, they are silent regarding the use of hydrogen peroxide in the dispersion process.

17. As stated above Gregorich et al. teach dispersion of an inorganic layered composition, in this case clay and soil is dispersed using hydrogen peroxide in a dispersion medium (page 397 first column).

18. In regards to claims 2 and 4 Gregorich et al. teach an almost 1/1 ratio of inorganic layer and hydrogen peroxide (using density of hydrogen peroxide and page 396 second column to 397 first column of Gregorich et al. to obtain this result). While Gregorich et al. teach that the hydrogen peroxide method is inferior, they do mention that "[t]he hydrogen peroxide is effective however, in disrupting silt sized aggregates which caused most of the increases in the clay sized materials with increased ultrasonic energy”. This would give one of ordinary skill in the art at the time of the invention motivation to combine clay and hydrogen peroxide with a more effective stirring or shaking device such as a high speed stirrer or an ultrasonic dispersion device in order to prevent the formation of aggregates.

19. One of ordinary skill in the art at the time of the invention would be motivated to combine the dispersion process of Gregorich et al. with the invention of Sakaya et al.

because the films which have gas barrier properties against oxygen and organic solvent vapors and offer good resistance to scratches on the base of the film of Sakaya et al. are formed from a dispersion process that would benefit from the complete dispersion with no evidence of redistribution or the formation of aggregates of the dispersion process of Gregorich et al. (page 395 top of page).

20. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaya et al. (US 5,942,298) in view of Gregorich et al. (Can. J Soil Sci **68**: 395-403) in further view of Uchida et al (US 6,569,533).

21. As stated above Gregorich et al. and Sakaya et al. teach a film which includes an inorganic layer dispersion. However they are silent regarding paper as a base layer.

22. Uchida et al. teach a polyurethane resin with excellent gas barrier properties (column 2 lines 28-35).

23. In regards to claim 12 Uchida et al. teach a gas barrier composite film comprising a base film layer formed with at least one member selected from the group consisting of a plastic, a paper, a fabric, a metal and a ceramic, an inorganic layer and a resin layer formed from an aqueous dispersion wherein the inorganic layer is formed on the base layer, and further the resin layer is formed on the inorganic layer (claim 10).

24. Examiner notes that Sakaya et al. teach away from using products that are not transparent, however if one did not need the film to be transparent Uchida et al. teach that paper could be used as the base of the film, and that it is known in the art to use paper as the bases for films.

25. One of ordinary skill in the art at the time of the invention would be motivated to modify the inventions of Gregorich et al. and Sakaya et al. with that of Uchida et al. because the gas barrier films of Gregorich et al. and Sakaya et al. could benefit from the barrier properties of Uchida et al against water vapor and aromatics (column 1 lines 5-10).

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nichols et al. (US 5,952,093) teach a composition of multilayer inorganic material and an organic resin. The journal articles of Hereter and Chahi which were cited in the international search report were not used, but would have been interchangeable with the article of Gregorich et al. which was used in this action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIK KASHNIKOW whose telephone number is (571)270-3475. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erik Kashnikow
Examiner
Art Unit 1794

/Callie E. Shosho/

Supervisory Patent Examiner, Art Unit 1794